

# Brent Barbachem

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## PROFESSIONAL OVERVIEW

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Motivated software engineer with more than seven years of experience producing clean and maintainable code, managing development teams, and architecting systems. Experienced in various development and design techniques.

## SOFTWARE SKILLS

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<b>Proficient</b>	C, C++, Python, LOGO, Docker, CMake, Google Protobuf, DDS, CAN, Linux/Unix
<b>Familiar</b>	Java, SQL, Bash, Lua, Go, C#, R, CI/CD, OpenGL, REST, Qt, Ogre, ArcGIS, Windows

## PROFESSIONAL EXPERIENCE

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**SOFTWARE ARCHITECT** | HUNTINGTON INGALLS INDUSTRIES (ACQUIRED SPATIAL INTEGRATED SYSTEMS, INC) JULY 2017 - PRESENT

- Lead engineer designing and implementing Unmanned Maritime Autonomy Architecture (UMAA) services
- Architect for all major projects for the autonomy group. Managed software tasking through the entire task lifecycle.
- Deploy high volume software requests to customers during live and simulated events.
- Design and implementation of autonomous behaviors/missions for unmanned vehicles.
- Maintain and contribute to custom RTI DDS extensions. Libraries were written and maintained in multiple programming languages. Solved complex participant issues spanning all core projects.

**SCIENTIST** | SPACE AND NAVAL WARFARE SYSTEM CENTER ATLANTIC NOV 2012 – JULY 2017

- Implemented custom storage system with required execution rate greater than 500 hz.
- Designed and implemented various parallel and serial communications systems.
- Lead software engineer for research project to analyze real-time audio information to determine emotional state. Utilized java and python to analyze big data.
- Backend and frontend development for distributed simulation environment using federations.

## PROJECTS

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**JANUS** | HUNTINGTON INGALLS INDUSTRIES / SPATIAL INTEGRATED SYSTEMS INC.

- Lead software engineer managing team of 8 developers to integrate the core autonomy solution with the graphical system and mechanical systems. The final product is service oriented and maintained with containers.
- Utilized: C++, Python, Synchronous and Asynchronous libraries, bash, Docker, RPMs, CAN, RTI DDS

**SUPER SWARM** | SPATIAL INTEGRATED SYSTEMS INC.

- Project lead engineer managing team of 10 engineers. Built the command-and-control system using Qt and Ogre with C++. Integrated with numerous third-party companies to integrate our autonomy system on new vehicles. Established a secure communications network utilizing radios, radars and Bluetooth devices.
- Utilized: C++, Python, bash, RPMs, CAN, RTI DDS, Qt, Ogre, ArcGIS

**WSN-12** | SPAWAR

- Created simulated legacy systems using Python. Designed and implemented parallel and serial communications systems capable of executing for months without failure. Implemented the prototype system display with Cairo. Implemented custom data storage with synchronous execution rates greater than 500 hz.
- Utilized: C, C++, Python, Bash, RPMs, X, Cairo, NTDS

## EDUCATION

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**OLD DOMINION UNIVERSITY** | M.E. MODELING SIMULATION & VISUALIZATION ENGINEERING (MSVE)

MAY 2016

**JAMES MADISON UNIVERSITY** | B.S. COMPUTER SCIENCE

MAY 2014